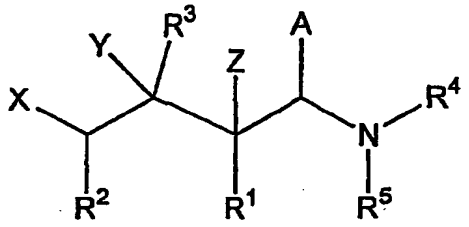
Claims:

1. Substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds of the general formula I,



I

in which

R^1 and R^2, identical or different, denote a C_{1-6} alkyl residue or together form a $(CH_2)_{2-6}$ ring, which may also be substituted or benzo-fused with at least one optionally at least mono-substituted aryl or heteroaryl residue,

R^3 denotes a C_{3-6} alkyl, a C_{3-7} cycloalkyl, an optionally at least mono-substituted aryl or heteroaryl residue or an optionally at least mono-substituted aryl or heteroaryl residue attached via a C_{1-3} alkylene group,

R^4 and R^5, identical or different, denote a C_{1-6} alkyl, a C_{3-7} cycloalkyl, a phenyl, a benzyl or a phenethyl or R^4 and R^5 together form a $(CH_2)_{3-6}$ or $-CH_2-CH_2-O-CH_2-CH_2$ ring,

X and Y or Y and Z together denote a bond,

A denotes an optionally at least mono-substituted aryl or heteroaryl residue,

in the form of the racemates, diastereomers or enantiomers thereof as a free base or a corresponding physiologically acceptable salt.

2. Substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds according to claim 1, characterised in that R^1 and R^2 together form a $(CH_2)_{2-6}$ ring, which may also be substituted or benzo-fused with at least one optionally at least mono-substituted aryl or heteroaryl residue.

3. Substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds according to claim 1 or 2, characterised in that R^1 and R^2 together form a cyclohexyl ring, which may also be substituted with an optionally at least mono-substituted phenyl residue.

4. Substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds according to one of claims 1 to 3, characterised in that R^3denotes an optionally at least mono-substituted aryl residue or an optionally at least mono-substituted aryl residue attached via a C_{1-3} alkylene group, preferably an optionally at least mono-substituted phenyl, benzyl or phenethyl residue.

5. Substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds according to one of claims 1 to 4, characterised in that the residues R^4 and R^5, identical or different, denote a C_{1-6} alkyl residue or together form a $-(CH_2)_5-$ or $-CH_2-CH_2-O-CH_2-CH_2$ ring,

preferably, identical or different, denote a C_{1-2} alkyl residue.

6. Substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds according to one of claims 1 to 5, characterised in that X and Y together denote a bond.

7. Substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds according to one of claims 1 to 6, characterised in that A denotes an optionally at least mono-substituted aryl residue, préferably an optionally at least mono-substituted phenyl residue.

8. Substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds according to one or more of claims 1 to 7:

Dimethyl-[phenyl-(2-phenyl-cyclohex-1-enyl)-methyl]-amine,

{[2-(4-Chloro-phenyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

[(2-Benzyl-cyclohex-1-enyl)-phenyl-methyl]-dimethyl-amine,

{[2-(4-Fluoro-3-methyl-phenyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

Dimethyl-[phenyl-(2-o-tolyl-cyclohex-1-enyl)-methyl]-amine,

[(2-Cyclopentyl-cyclohex-1-enyl)-phenyl-methyl]-dimethyl-amine,

Dimethyl-[phenyl-(2-m-tolyl-cyclohex-1-enyl)-methyl]-amine,

(Bicyclohexyl-1-en-2-yl-phenyl-methyl)-dimethyl-amine,

{[2-(4-Fluoro-phenyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

Dimethyl-[(2-phenethyl-cyclohex-1-enyl)-phenyl-methyl]-amine,

{[2-(3-Methoxy-phenyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

Dimethyl-{phenyl-[2-(3-phenyl-propyl)-cyclohex-1-enyl]-methyl}-amine,

{[2-(2-Chloro-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(4-Fluoro-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(3-Methoxy-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(3-Fluoro-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(2-Methoxy-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(3,5-Difluoro-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(2-Fluoro-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(2-Chloro-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(3-Fluoro-benzyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

Dimethyl-{phenyl-[2-(3-trifluoromethyl-benzyl)-cyclohex-1-enyl]-methyl}-amine,

Dimethyl-[(2-phenethyl-cyclohex-1-enyl)-phenyl-methyl}-amine,

3-[6-(Dimethylamino-phenyl-methyl)-cyclohex-1-enyl]-phenol,

Dimethyl-{phenyl-(2-(4-trifluoromethylphenyl)-cyclohex-1-enyl]-methyl}-amine,

2-Chloro-5-[6-(dimethylamino-phenyl-methyl)-cyclohex-1-enyl]-phenol,

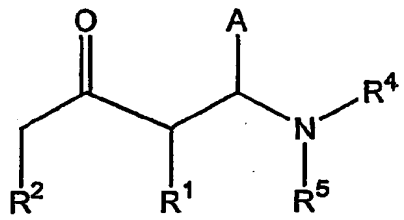
{[2-(4-Methoxy-phenyl)-cyclohex-2-enyl]-phenyl-methyl}-dimethyl-amine,

{[2-(4-Chloro-phenyl)-cyclohex-1-enyl]-phenyl-methyl}-dimethyl-amine,

Dimethyl-[(2-phenyl-cyclohex-1-enyl)-(4-trifluoromethyl-phenyl)-methyl]-amine,

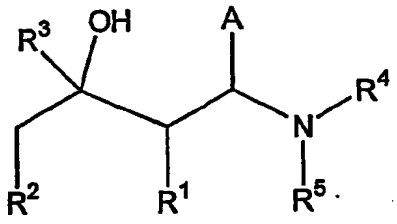
and the corresponding physiologically acceptable salts, preferably the hydrochlorides thereof.

9. A process for the production of substituted 1-aryl-but-3-enylamine and 1-aryl-but-2-enylamine compounds of the general formula I according to one or more of claims 1 to 8, characterised in that at least one Mannich base of the general formula II,



II

in which R^1, R^2, R^4, R^5 and A have the meaning according to the general formula I according to claim 1, is reacted with at least one organometallic compound of the general formula R^3-B, in which B denotes MgCl, MgBr, MgI or Li and R^3 has the meaning according to the general formula I according to claim 1, to yield at least one alcohol of the general formula III,



III

in which the residues R^1 to R^5 and A have the meaning according to the general formula I according to claim 1, and this is optionally purified by conventional methods and/or optionally isolated by conventional methods, and reacted with a suitable acid optionally in the presence of a suitable solvent to yield at least one compound of the general formula I according to claim 1.

10. A process according to claim 9, characterised in that a protonic acid, a Lewis acid or a mixture thereof is used as suitable acid.

11. A process according to claim 10, characterised in that hydrogen bromide, hydrogen chloride or formic acid is used as protonic acid.

12. A process according to claim 10 or 11, characterised in that trimethylsilyl iodide or chlorotrimethylsilane is used as the Lewis acid.

13. A process according to one of claims 9 to 12, characterised in that reaction of the alcohol with the acid is performed at a temperature of 5 to 150°C, preferably at a temperature of 10 to 130°C,

particularly preferably at a temperature of 15 bis 120°C.

14. A pharmaceutical preparation containing at least one substituted 1-aryl-but-3-enylamine or 1-aryl-but-2-enylamine compound according to one of claims 1 to 8 and optionally physiologically acceptable auxiliary substances.

15. A pharmaceutical preparation according to claim 14 for combatting pain.

16. A pharmaceutical preparation according to claim 14 for the treatment of depression.

17. A pharmaceutical preparation according to claim 14 for the treatment of hypotension.

18. A pharmaceutical preparation according to claim 14 for the treatment of hypertension.

19. A pharmaceutical preparation according to claim 14 for the treatment of senile dementia.

20. A pharmaceutical preparation according to claim 14 for the treatment of Alzheimer's disease.

21. A pharmaceutical preparation according to claim 14 for the treatment of general cognitive dysfunction.

22. A pharmaceutical preparation according to claim 14 for the treatment of tinnitus.

23. A pharmaceutical preparation according to claim 14 for the treatment of hardness of hearing.

24. A pharmaceutical preparation according to claim 14 for the treatment of epilepsy.

25. A pharmaceutical preparation according to claim 14 for the treatment of obesity.

26. A pharmaceutical preparation according to claim 14 for the treatment of cachexia.

27. A pharmaceutical preparation according to claim 14 for the treatment of urinary incontinence.

28. A pharmaceutical preparation according to claim 14 for anxiolysis.

29. A pharmaceutical preparation according to claim 14 for diuresis.

30. Use of at least one substituted 1-aryl-but-3-enylamine or 1-aryl-but-2-enylamine compound according to one of claims 1 to 8 for the production of a pharmaceutical preparation for combatting pain, for the treatment of depression, hypotension, hypertension, senile dementia, Alzheimer's disease, general cognitive dysfunction, tinnitus, hardness of hearing, epilepsy, obesity, cachexia or urinary incontinence or for anxiolysis or diuresis.